

ILLUSTRATED CATALOGUE
OF THE
CELEBRATED
VOIGTLÄNDER & SON'S
PORTRAIT-LENSES & EURYSCOPES.



ALSO, THE WELL-KNOWN
DARLOT LENSES.

SOLE AGENTS FOR THE UNITED STATES,
BENJAMIN FRENCH & CO.,
NO. 319 WASHINGTON ST., BOSTON, MASS.

APRIL, 1887.

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PREFACE.

THE VOIGTLÄNDER LENSES have attained such world-wide fame, and continue to be universally recognized as the very finest lenses ever constructed, that it would be superfluous to dwell on their rapid growth, their unequalled powers, and the numerous high honors bestowed upon the makers — Messrs. Voigtländer & Son. The career of this celebrated firm is marked by an unbroken series of unqualified successes, as illustrated by their double portrait-objective — the *first* ever produced — their renowned Euryscope, and, recently, their superb Portrait-Euryscopes. The Voigtländer lenses, in their present improved form, present the greatest perfection yet reached in photographic lenses, and there is no requirement in the wide range of photography to which they are not eminently suited, yielding results of superlative excellence. Much of their phenomenal success is due to their uniform excellence, an inferior Voigtländer lens never having been produced. After a lens has been completed, it is subjected to a most thorough optical and practical test by Mr. Voigtländer himself, who permits no instrument to leave his establishment unless it is absolutely perfect in every detail, regardless of the time and material consumed in its construction. All Voigtländer lenses are composed of the choicest and most expensive optical glass, and occasional small bubbles, which are impossible to avoid in its production, are quite harmless, as they do not in the least affect the efficiency of the lens. Every genuine lens has engraved upon the barrel the number indicating its size, its denomination, the manufacturers' number, and the makers' name — "Voigtländer & Sohn" — exactly as represented in the cuts.

ON THE CHOICE OF PORTRAIT-LENSES.

THE selection of a lens for use in the studio depends upon a variety of conditions, chief of which are the size of picture, the working-speed of the lens, and the length of studio. The greater the illuminating power of the instrument, the more quickly it works, but in the same proportion the focal length and size of picture are diminished. Increase of illuminating power is always attended with a sacrifice of depth of focus, and *vice versa*. Objectives of longer focus produce pictures excelling in correct physical proportions; but this result is never attained by straining the covering-power of a lens — a practice quite common among photographers. An experienced artist will always prefer a large instrument, provided his studio will admit of its use, instead of trying to make large pictures with a small lens, which is accomplished only by the use of small stops, and at the expense of speed. Then, too, a large quick-acting portrait-lens has the added advantage of enabling the operator to increase the size of field by the use of stops.

Every enterprising photographer should possess a set of lenses capable of producing any class of work required of him. He should have a "quick-worker" for children and nervous persons; a regular cabinet lens, and a Euryscope or two for standing figures, groups and large heads, and for occasional out-of-door work.

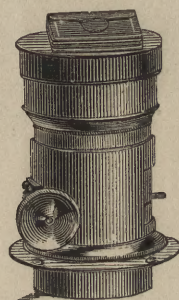
No one lens can be expected to do the work of three lenses.

FIRST SERIES.

VOIGTLÄNDER & SON'S

REGULAR

Exclusively



PORTRAIT-LENS,

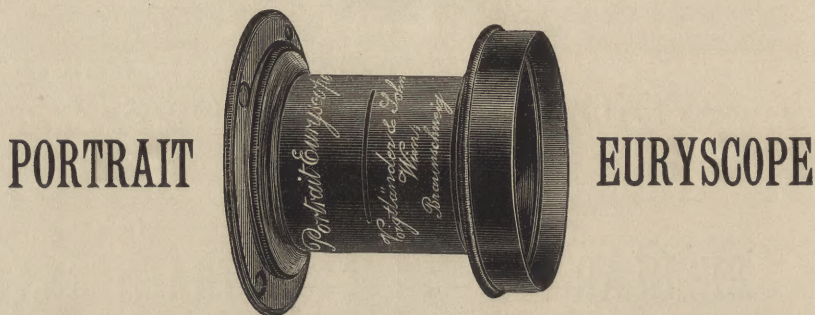
For Portraits.

"QUICK-WORKERS."

THESE are double-combination lenses; possess the greatest illuminating power consistent with fine definition, and work in less time than any other regular portrait-lens. They are, therefore, very desirable for photographing children and nervous persons, but specially adapted to bust-portraits on cards and cabinets, yielding pictures which excel in roundness (stereoscopic effect) and extreme brilliancy. All are provided with rack and pinion movement (except No. 6 B and No. 7 B, which are mounted in rigid settings) and central stops. Ratio of aperture to focus 1 to $3\frac{1}{8}$ or $\frac{F}{3.16}$.

Number.	Diameter of Lens.	Equivalent Focus.	Size of Plate.	Price.
3B	2 in.	$6\frac{1}{2}$ in.	$3\frac{1}{4} \times 4\frac{1}{4}$	\$57 00
4B	$2\frac{1}{2}$ "	$8\frac{1}{4}$ "	$4\frac{1}{4} \times 6\frac{1}{2}$	78 00
5B	3 "	$9\frac{1}{8}$ "	5×7	90 00
6B	$3\frac{1}{2}$ "	11 "	$6\frac{1}{2} \times 8\frac{1}{2}$	130 00
7B	4 "	14 "	8×10	165 00

The Latest Achievement in Portrait-Lenses.

VOIGTLÄNDER & SON'S
NEW

THE IDEAL LENS FOR PORTRAITS, GROUPS AND FIGURES.

Unlike the regular Portrait-Lenses, the front combination of which consists of one compound lens and the rear combination of two separate lenses of quite dissimilar shape, these new lenses are composed of two perfectly symmetrical and cemented combinations, similar to the Euryscopes, and offer several important advantages. By sealing the two separate lenses of the rear combination, the number of reflecting surfaces is reduced, thus saving a considerable amount of light formerly lost, and as, moreover, all diffusion of light is obviated, these new Portrait-Euryscopes produce more brilliant pictures and improved definition, *with absolute freedom from distortion.*

The front and back combinations being perfectly symmetrical, superior marginal definition and perfectly even illumination of the plate can be obtained, and, with the same length of focus as heretofore, a larger field is covered and the size of the image increased, the resulting picture being absolutely free from distortion.

The Portrait-Euryscopes are made in two series as regards working-speed. The first are short focus, and take the place of Voigtlander's Portrait-Lenses of normal speed — having the same ratio of aperture to focal length — but excel them in covering-capacity, depth of focus, and powers of definition. The other series (Third Series of this catalogue) — and these will be found more useful — are longer focus, and, consequently, less rapid, but sufficiently quick-working for all ordinary portrait-work in the studio. Possessing, too, greater covering-power and more depth of focus, they are especially adapted to taking groups and standing-figures in short studios, where the regular Euryscopes, on account of their longer focus, may not be available. They are also excellent for instantaneous work, inasmuch as the flare, characterizing portrait-lenses when used out of doors, does not exist. This construction of the Portrait-Euryscopes virtually fills a gap in the series of existing portrait-lenses, and, as they are lighter and shapelier than the old long-focus portrait-objectives, besides being *perfectly rectilinear*, they will become great favorites. Each instrument is provided with central stops.

SECOND SERIES.

PORTRAIT-EURYSCOPE.

SHORT FOCUS. RATIO, 1 to 4, or $\frac{F}{4}$.

Specially adapted to general portrait-work in very short or dimly-lighted studios.

Number.	Diameter.	Equivalent Focus.	Size of Plate.	Price.
3	2 in.	$7\frac{2}{3}$ in.	$4\frac{1}{4} \times 6\frac{1}{2}$	\$62 00
4	$2\frac{1}{2}$ "	$9\frac{3}{4}$ "	$6\frac{1}{2} \times 8\frac{1}{2}$	86 00
5	3 "	$11\frac{1}{2}$ "	8 × 10	116 50
6	$3\frac{1}{2}$ "	14 "	10 × 12	145 00
7	4 "	$17\frac{1}{2}$ "	12 × 15	175 00

Nos. 3, 4 and 5 have Rack and Pinion. Nos. 6 and 7 mounted in rigid settings.

THIRD SERIES.


PORTRAIT-EURYSCOPE.

LONGER FOCUS. RATIO, 1 to $4\frac{1}{2}$, or $\frac{F}{4.50}$.

Unrivalled for general portrait-work. Excellent for groups in short studios.

Number.	Diameter.	Equivalent Focus.	Size of Plate.	Price.
1A	$1\frac{1}{2}$ in.	$6\frac{1}{2}$ in.	$3\frac{1}{2} \times 4\frac{1}{2}$	\$45 00
2A	$1\frac{3}{4}$ "	$7\frac{1}{2}$ "	$4\frac{1}{2} \times 6$	55 00
3A	2 "	$8\frac{2}{3}$ "	5 × 8	70 00
4A	$2\frac{1}{2}$ "	$10\frac{5}{6}$ "	$6\frac{1}{2} \times 8\frac{1}{2}$	95 00
5A	3 "	13 "	10 × 12	130 00
6A	$3\frac{1}{2}$ "	$15\frac{1}{3}$ "	11 × 14	186 50
7A	4 "	$19\frac{1}{3}$ "	14 × 17	226 50
8A	5 "	25 "	17 × 20	426 50

All these are mounted in rigid settings.

 NOTE. — In removing the lenses from the tubes for the purpose of cleaning or inspection, it is essential that they be replaced in their proper original position, otherwise the diaphragms will not, as they ought, pass through the optical centre of the instrument. The best plan is to remove, clean, and return one combination at a time, thus ensuring the correct adjustment of the objective.

OFFICIAL REPORT

OF THE

COMMITTEE APPOINTED BY THE PHOTOGRAPHIC SOCIETY OF VIENNA

TO TEST

Voigtländer's New Portrait-Euryscope.

[Translated from the Photographische Correspondenz.]

The undersigned have been requested to test the new Portrait-Euryscope of Mr. Friedrich von Voigtländer, with the view to ascertain its fitness for photographing Portraits and Groups, in comparison with the Portrait-Combination (Petzval system) with separated back-lens heretofore used.

The experiments were made with two new Portrait-Euryscopes, of three and four inch diameter, in comparison with the corresponding ordinary Portrait-Objectives (back-lens separated), single Portraits and Groups being selected for the purpose. The Portrait-Euryscope consists of two symmetrical combinations, the lenses of which are sealed together.

Diameter, focal length, and illuminating power of the lenses tested are explained in the following table:—

Portrait-Euryscopes.	Diameter of Lenses.	Equivalent Focal Length.	Ratio of Aperture to Focus.
No. 5A	78 Mill.=3 in.	340 Mill.=13 in.	1 to $4\frac{1}{3}$
No. 7A	104 Mill.=4 "	500 Mill.=19 $\frac{1}{2}$ "	1 to $4\frac{3}{4}$

The angle of the Portrait-Euryscope is over fifty degrees, whilst in the ordinary four-inch Portrait-Objective it does not exceed forty degrees. The experiments made by the undersigned showed, that in general the work of the Portrait-Euryscopes is equal to that of the best Portrait-Objectives. The illuminating power of the Portrait-Euryscopes, No. 5A and No. 7A, proved to be, in practical photographic experiments under the skylight, just as great as that of Voigtländer's Portrait-Objective of normal focus (*i. e.*, 4-inch diameter and 18 $\frac{1}{2}$ -inch focus, or, a ratio of 1 to $4\frac{1}{2}$), although the latter possesses a shorter focus than the former. The reason for this is that light passes more readily through *sealed* back-lenses than through *separated* back-lenses. The depth of focus is greater in the Portrait-Euryscopes than in the regular Portrait-Objectives, the definition of the picture much improved, the field more uniformly illuminated, and the angle of view larger. The Portrait-Euryscope is rectilinear, and defines straight lines correctly. The size of plate for groups, as obtained with the Portrait-Euryscope, was as follows: The 4-inch Portrait-Euryscope yielded a plate 18 $\frac{1}{2}$ inches in diameter, whereas the 4-inch regular Portrait-Objective with separated back-lenses produced a plate of only 14 $\frac{1}{2}$ -inch diameter. The Portrait-Euryscope is equal to all demands that may be made upon it in the studio, and, for the reason that it yields a greater angle of view and larger size of plate, it is particularly adapted to the photography of groups in short studios. In conclusion it should be stated that Voigtländer's new Portrait-Euryscope marks the first great and important improvement in Portrait-Objectives since the introduction, in 1840, of the Portrait-Combination with separated back-lenses, which is in use up to the present day.

VICTOR ANGERER,
FRITZ LUCKHARDT,
VICTOR TOTH,

PROF. J. M. EDER,
DR. JOS. SZEKELY,
CARL WRABETZ,

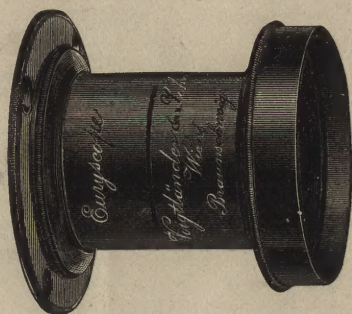
J. LÖWY,
CH. SCOLIK,
O. VOLKMER.

VIENNA, May 28, 1886.

FOURTH SERIES.

VOIGTLÄNDER & SON'S

Extra Rapid



Euryscope,

Known heretofore as the "Improved" Euryscope.

FOR GROUPS, STANDING FIGURES, LARGE HEADS, BUILDINGS,
LANDSCAPES, INSTANTANEOUS WORK, AND COPYING.

This most wonderful lens consists of two achromatic and symmetrical combinations, between which the diaphragms are placed. It is absolutely free from distortion, chemical focus, and central flare ("ghosts"), the picture produced with it being mathematically correct and clearly and evenly illuminated. The "Extra Rapid Euryscope" is universally conceded to be the quickest lens of its class yet produced, and, yielding as it does, pictures of remarkable depth of focus, perfect definition, rare brilliancy, and uniform illumination, it is indispensable for studio work. Its success has been simply phenomenal, and its popularity continues as strong as ever.

A very careful choice of optical glass composing this lens renders it possible to secure a ratio of aperture and focus of about 1 to 6, or $\frac{f}{6}$. The width of angle embraced is from 65 to 85 degrees, according to the size of plate and diaphragm used. All genuine Euryscopes are marked "Voigtlander & Sohn," by whom they are made exclusively.

SIZE.	Diameter of Lens.	Equivalent Focal Length.	Size Portrait or Group.	Size Landscape.	Price.
0	1 1-16 in.	$4\frac{3}{4}$ in.	4 × 5 in.	5 × 6 in.	\$27 00
00	1 1-4 "	$6\frac{1}{2}$ "	5 × 6 "	6 × 8 "	37 50
1	1 1-2 "	$8\frac{1}{4}$ "	5 × 7 "	7 × 9 "	45 00
2	1 3-4 "	10 "	7 × 9 "	8 × 10 "	52 00
3	2 1-6 "	$11\frac{1}{2}$ "	8 × 10 "	10 × 12 "	65 00
4	2 1-2 "	$14\frac{1}{3}$ "	10 × 12 "	11 × 14 "	87 00
5	3 1-8 "	$17\frac{1}{3}$ "	13 × 16 "	17 × 20 "	130 00
6	3 1-2 "	$21\frac{1}{3}$ "	17 × 20 "	18 × 22 "	170 00
7	4 1-8 "	$24\frac{1}{2}$ "	18 × 22 "	20 × 24 "	210 00
*8	5 1-8 "	32 "	27 × 32 "	30 × 36 "	390 00

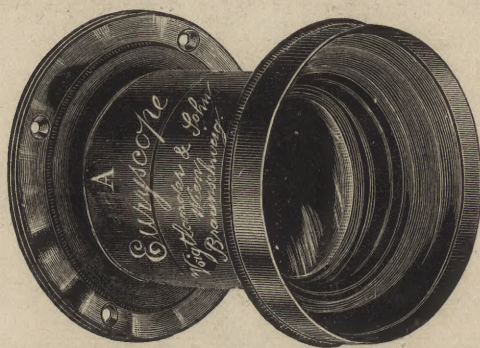
Nos. 0 and 00 can be had in matched pairs of equal focus for Stereoscopic work.

*It is No. 8 Euryscope of this series which was used in the production of the 36 × 60 inch dry-plate negative of a life-size, three-quarter-length portrait of lady *from life*, a direct contact print of which was exhibited at the St. Louis Convention in 1886, and obtained for the artist, Mr. T. R. Burnham, of Boston, a special silver medal.

FIFTH SERIES.

VOIGTLÄNDER & SON'S

Rapid



Euryscope,

For Landscapes, Buildings, Instantaneous Work; also, Standing Figures, Groups and Large Heads in the Studio.

Among the lenses most frequently in demand is one that shall combine extreme depth of focus, a very flat field, a large image of distant objects, and increased covering-power with great speed. These qualities are possessed in the most eminent degree by the "RAPID EURYSCOPES," which have proved invaluable for Landscape and Instantaneous Photography. When used for Standing Figures and Large Heads in the Studio, these Euryscopes, though not quite equal in working-rapidity to the Extra Rapid Euryscopes (Fourth Series), produce superior effects of proportion and perspective, for the reason that they are not used so near the sitter. In very short studios the "Rapid Euryscopes" are not available, except, of course, for making large heads.

On account of their wonderful definition with full aperture, and their great working-speed, these lenses have become special favorites with amateurs. The ratio of opening to focus is 1 to $7\frac{3}{4}$, or $7\frac{7}{8}$, while the angle of view embraced ranges from 60 to 75 degrees. None are genuine unless marked "Voigtlander and Sohn."

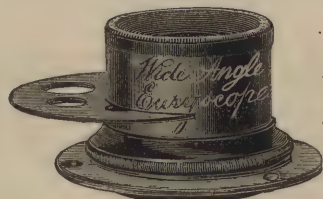
SIZE.	Diameter of Lens.	Equivalent Focal Length.	Size of Portrait or Group.	Size of Landscape.	Price.
No. 0A	1 in.	6 in.	4 × 5 in.	5 × 7 in.	\$30 00
" 00A	1 $\frac{1}{4}$ "	8 $\frac{1}{4}$ "	5 $\frac{1}{2}$ × 7 $\frac{1}{2}$ "	7 × 9 "	40 00
" 1A	1 $\frac{1}{2}$ "	10 $\frac{3}{4}$ "	6 $\frac{1}{2}$ × 8 $\frac{1}{2}$ "	8 × 10 "	52 00
" 2A	1 $\frac{3}{4}$ "	13 "	8 × 10 "	10 × 12 "	64 00
" 3A	2 "	16 "	10 × 12 "	11 × 14 "	80 00
" 4A	2 $\frac{1}{2}$ "	20 "	12 × 15 "	14 × 17 "	110 00
" 5A	3 "	24 "	16 × 18 "	17 × 20 "	157 00
" 6A	3 $\frac{1}{2}$ "	28 "	18 × 22 "	20 × 24 "	208 00
" 7A	4 "	32 "	20 × 24 "	24 × 30 "	240 00

No 0A can be had in matched pairs of equal focus for Stereoscopic work.

SIXTH SERIES.

VOIGTLÄNDER & SON'S

WIDE ANGLE



EURYSCOPE,

FOR INTERIORS, BUILDINGS, LANDSCAPES, AND COPYING.

There are cases, particularly in photographing Interiors and Architectural Subjects, when, on account of limited distance, it is impossible to take a picture, unless provided with a suitable wide-angle lens. This want is filled by the Wide-Angle Euryscope, which possesses a very large angle of view, and embraces objects in the picture which cannot be secured with the regular Euryscopes. It is pronounced by leading experts the best and quickest wide-angle lens made, and produces results marked by superb definition, absolute freedom from distortion, a perfectly flat field, and a delicacy of effect adding a peculiar charm to the picture. Being short focus, it is admirably adapted to copying maps, engravings, etc. The small sizes, from No. 00 to No. 4 inclusive, are provided with rotating diaphragms, and are so mounted as to fit into one and the same flange—a feature which has obvious advantages. They are, moreover, so compact as to be easily carried in one's pocket. The larger sizes, No. 5 and upwards, have Waterhouse diaphragms, a set of which, in a neat leather-case, accompanies each lens. The first six sizes are excellent for Instantaneous Views.

Size.	Diameter of Lens.	Equivalent Focal Length.	Size Plate with Full Aperture.	Size Plate with Smallest Stop.	Price.
00	7-16 in.	3 $\frac{1}{4}$ in.	3 × 4 in.	4 × 5 in.	\$27 00
0	8-16 "	4 $\frac{1}{6}$ "	4 × 5 "	5 × 6 "	29 00
1	10-16 "	5 $\frac{1}{3}$ "	5 × 6 "	5 × 7 "	34 00
2	11-16 "	6 $\frac{1}{3}$ "	5 × 7 "	6 $\frac{1}{2}$ × 8 $\frac{1}{2}$ "	39 00
3	14-16 "	7 $\frac{1}{3}$ "	6 × 8 "	8 × 10 "	48 00
4	1 1-16 "	9 "	8 × 10 "	11 × 14 "	65 00
5	1 5-16 "	16 "	11 × 14 "	14 × 18 "	82 00
6	1 9-16 "	20 "	14 × 18 "	17 × 20 "	100 00
7	1 13-16 "	25 "	17 × 20 "	20 × 24 "	130 00
8	2 1-16 "	32 "	20 × 24 "	24 × 36 "	225 00

Nos. 00 and 0 may be had in matched pairs of equal focus for Stereoscopic work.

CORRECT FOCUSING.

COMPLAINTS often reach us that the Euryscope Lenses do not cut sharp to the edges even with the smallest stop. This is due to incorrect focusing, and is *not the fault of the Lens*. To get the best definition and finest depth of focus proceed as follows:—

Focus, without a stop, on any object midway between the nearest and farthest points of the picture, which usually falls between the centre and the right or left of the ground-glass. Now insert a small diaphragm, and the picture will be sharply focused from edge to edge. For upright pictures focus above or below the centre of the plate. Adopt this method of focusing also in making groups and in copying, and even with a medium stop finer results will be obtained than when focusing in the centre and using the smallest stop. For large heads it is important that the focus should be well divided to ensure clear and uniform definition, fine depth of focus, and a round, soft effect. The smaller the stop used, the greater the resulting definition and depth of focus.

In making groups or single figures it is not well to strain the covering capacity of a lens, as thereby the marginal portions of the picture are liable to be out of proportion.

For near views focus well on the foreground; but in all cases where the camera is tilted, see that the ground-glass is *plumb* before focusing. Insert the diaphragm *last*.

DARLOT LENSES,

FOR

PORTRAITS AND VIEWS.

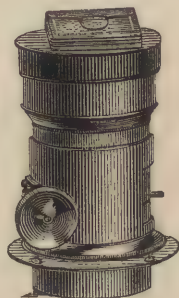
SOLE AGENTS IN THE UNITED STATES

BENJAMIN FRENCH & CO.,
BOSTON.

THESE well-known and popular lenses are universally conceded to be superior to those made by any other French optician, Mr. Darlot having received the highest awards over all native competitors whenever he has exhibited. The extremely low price at which the Darlot Lenses are sold is not the only reason why they are in such great demand; for, in point of speed and general excellence, they are fully equal to the best lenses in the market — excepting, of course, Voigtländer & Son's Euryscope lenses — of which fact a fair and intelligent trial will convince any one. Unfortunately there are many spurious Darlot lenses and worthless imitations in the market; and, in order to protect our customers against impositions, we have our initials, "B. F. & Co.", engraved on all Darlot Lenses of our importation.

BENJ. FRENCH & CO.

DARLOT



LENSES.

Having seen a great many spurious Darlot lenses, and against which we warn the profession, we have "B. F. & Co." engraved on the tubes of all sizes. See that this mark is on them, if you want the genuine Darlot.

DARLOT PORTRAIT-LENSES,

WITH RACK AND PINION, PLAIN.

We have these Lenses made expressly for Magic Lanterns and Stereopticons. Can be had in matched pairs of equal focus.

SIZE.	Diameter.	Focus.	Price.
1-4	$1\frac{5}{8}$ inch.	$4\frac{1}{2}$ inch.	\$7 00
1-3	$1\frac{7}{8}$ "	$5\frac{1}{2}$ "	12 00
1-2	$2\frac{1}{4}$ "	7 "	14 50
2-3	$2\frac{1}{2}$ "	$8\frac{1}{2}$ "	21 00
4-4	3 "	$10\frac{1}{2}$ "	32 00

 See table of sizes and distances for projection on inside cover.

DARLOT PORTRAIT-LENSES,

WITH RACK AND PINION, AND CENTRAL STOPS.

SIZE.	Diameter.	Focus.	Size of Plate.	Price.
1-4	$1\frac{5}{8}$ inch.	$4\frac{1}{2}$ inch.	$3\frac{1}{4} \times 4\frac{1}{4}$ inch.	\$8 75
1-3	$1\frac{7}{8}$ "	$5\frac{1}{2}$ "	$4\frac{1}{4} \times 5\frac{1}{2}$ "	14 50
1-2	$2\frac{1}{4}$ "	7 "	5×7 "	17 50
4-4	3 "	$10\frac{1}{2}$ "	8×10 "	35 50
8-4	4 "	15 "	11×14 "	105 00

The 1-4, 1-3 and 1-2 can be had in matched pairs of equal focus.

DARLOT QUICK-WORKING PORTRAIT-LENSES,

WITH RACK AND PINION, AND CENTRAL STOPS.

SIZE.	Diameter.	Focus.	Size of Plate.	Price.
1-2	$2\frac{1}{4}$ inch.	$5\frac{1}{2}$ inch.	$3\frac{1}{4} \times 4\frac{1}{4}$ inch.	\$22 00
2-3	$2\frac{1}{2}$ "	7 "	5×7 "	32 00
4-4	3 "	8 "	$6\frac{1}{2} \times 8\frac{1}{2}$ "	43 00
Extra 4-4	4 "	11 "	8×10 "	85 00

Darlot's Rapid Hemisphericals,

FOR PORTRAITS AND VIEWS.



These Lenses embrace an angle of from 60° to 75° ; are quick-acting, perfectly rectilinear, and for rapidity are surpassed only by the Euryscopes.

Most excellent for portraits and general gallery-work; also buildings, landscapes, instantaneous work, and copying purposes.

No.	Diameter.	Back Focus.	Portrait.	View.	Price.
1	1 in.	$5\frac{1}{2}$ in.	4×5 in.	5×7 in.	\$15 00
2	$1\frac{1}{4}$ "	9 "	5×7 "	6×8 "	25 00
3	$1\frac{1}{2}$ "	$10\frac{1}{2}$ "	6×8 "	8×10 "	35 00
4	$1\frac{3}{4}$ "	14 "	8×10 "	11×14 "	50 00
5	$2\frac{1}{8}$ "	18 "	11×14 "	14×17 "	76 00
6	3 "	21 "	14×17 "	17×20 "	90 00

Nos. 1 and 2 can be had in matched pairs of equal focus for Stereoscopic work.

DARLOT'S

Wide-Angle Hemisphericals.



These Lenses embrace an angle of 90° , and, being rectilinear, they are valuable for Interiors, Buildings, Landscapes, etc., and in confined localities, where lenses of longer focus cannot be used. Provided with three lever diaphragms.

No.	Diameter.	Back Focus.	Size View.	Each.
1	$\frac{3}{4}$ in.	$2\frac{1}{2}$ in.	Stereoscopic	\$12 50
2	1 "	3 "	4×5	15 00
3	$1\frac{1}{4}$ "	5 "	$6^2 \times 8^2$	20 00
4	$1\frac{5}{8}$ "	8 "	10×12	25 00
5	$2\frac{1}{4}$ "	12 "	14×17	35 00
6	3 "	16 "	17×20	50 00

Nos. 1 and 2 furnished in matched pairs for Stereoscopic work.

DARLOT'S

Gem



Lenses.

1-9 size	.	.	.	.	.	.	.	.	\$2 50
1-6 "	.	.	.	.	.	.	.	.	3 50
1-4 "	.	.	.	.	.	.	.	.	4 00

These we can supply in sets of four, six, eight, nine, or more — all perfectly matched. In order to work uniformly well, they should all be screwed tightly into position, be kept clean, and replaced correctly if separated for inspection. More than this, the swing-back of camera must be properly adjusted, and ground-glass and plate-holder must agree perfectly. The camera should not be tilted forward too much, otherwise some of the lenses will be thrown out of focus.

DARLOT'S

Stereoscopic Lenses.



(IMITATION DALLMEYER.)



These Lenses are made expressly for us, and have our name engraved on tube. Provided with central stops. Suitable for Portraits, Views, and Instantaneous Pictures, and will work in or out of doors. By removing the back-lens, and simply using front-lens in its stead, a six-inch focus is obtained. The great and increasing demand for these lenses is a sure proof that they are the best. Back-focus 4 inches. Price, \$18.00 per pair.

DARLOT'S

Single



View-Lenses.

These are single-combination Lenses, and intended for purely Landscape work. With rack and pinion movement.

Size.	Diameter.	Focus.	Plate.	Price.
1-9	1 in.	5 in.	Stereo.	Per pair \$9 00
1-6	1 $\frac{1}{4}$ "	5 $\frac{1}{2}$ "	4 × 5	" 10 00
1-4	1 $\frac{1}{2}$ "	7 "	5 × 7	Each . . 6 00
1-3	1 $\frac{7}{8}$ "	9 $\frac{1}{2}$ "	7 × 9	7 25
1-2	2 $\frac{1}{4}$ "	12 $\frac{1}{2}$ "	10 × 12	9 00
2-3	2 $\frac{1}{2}$ "	16 "	11 × 14	13 00
4-4	3 $\frac{1}{4}$ "	20 "	14 × 18	18 00

DARLOT'S Condensing-Lenses.

Plano-convex, made of White Crown Glass, are short focus, and perfectly polished. We can safely recommend them as the best lenses ever made for solar work and enlarging on Bromide paper.

					Each.
10-inch diameter, 14-inch focus					\$26 00
12 " " 16 " "					40 00
14 " " 18 " "					55 00
15 " " 20 " "					65 00
16 " " 21 " "					75 00
18 " " 25 " "					115 00
20 " " 35 " "					160 00

SAME QUALITY AS ABOVE, BUT LONGER FOCUS.

					Each.
6-inch diameter, 15-inch focus					\$5 00
8 " " 20 " "					12 50
10 " " 20 " "					22 00

DARLOT'S Condensing-Lenses.

PLANO-CONVEX

FOR MAGIC LANTERNS AND STEREOPTICONS.

					Per pair.
4 $\frac{1}{8}$ -inch diameter, 6 $\frac{1}{2}$ -inch focus					\$5 00
4 $\frac{3}{8}$ " " 7 $\frac{1}{2}$ " "					6 00
5 " " 7 $\frac{1}{2}$ " "					7 50

These can be mounted in brass for \$4.50 to \$5 per pair, and in tin for \$1.50 to \$2 per pair.

DARLOT'S

Adjustable



Focusing Glass.

Each \$2 50

PRICES OF
CENTRAL-STOPS, FLANGES AND LEATHER-CAPS.
FOR THE EURYSCOPES.

	Sets of Central-Stops, in Morocco Cases.	Leather-Caps.	Flanges.
No. 0 and 00	\$2 00	\$ 50	\$ 75
" 1	2 50	75	75
" 2	2 75	75	1 00
" 3	3 00	1 00	1 20
" 4	3 50	1 00	1 50
" 5	4 25	1 20	1 75
" 6	5 00	2 25	2 00
" 7	7 00	2 75	2 50
" 8	9 00	3 25	3 00

FOR THE NEW VOIGTLÄNDER & SON
PORTRAIT-LENSES.

	Sets of Central-Stops in Morocco Cases.	Leather-Caps.	Flanges.
No. 1	\$1 75	\$ 75	\$ 75
" 2	2 25	1 00	1 00
" 3	2 75	1 00	1 20
" 4	3 00	1 00	1 25
" 5 B	3 75	1 25	1 50
" 5	3 75	1 25	1 50
" 5 A	3 75	1 25	1 50
" 6	4 50	2 00	2 00

FOR THE DARLOT PORTRAIT-LENSES.

	Central-Stops.	Flanges.	Leather-Caps.
Stereo. Tubes per set	\$1 50	\$ 75	\$ 50
1-4 size, " "	1 50	75	75
1-3 " " "	1 75	80	80
1-2 " " "	2 00	1 00	1 00
2-3 " " "	2 25	1 25	1 10
4-4 " " "	2 50	1 50	1 25

Caps, Flanges and Central-Stops for the Darlot Rapid Hemispherical, same price as those for Euryscopes.

TABLE FOR STEREOPTICONS.—CARE OF LENSES.

TABLE FOR STEREOPTICONS AND MAGIC LANTERNS.

As nearly every purchaser of a lens for projecting purposes desires to know the distance required to produce a given-sized picture on the screen, or, how large a picture different-sized lenses will make at a certain distance, we have prepared the following table, which will be found very useful. The opening of the slide used measures $2\frac{3}{4}$ inches.

1-4 Darlot Portrait at 14 feet distance gives a 7-foot picture.

1-4	"	24	"	"	12	"
1-3	"	36	"	"	12	"
1-2	"	110	"	"	32	"
1-2	"	57	"	"	18	"
2-3	"	57	"	"	15	"
4-4	"	80	"	"	16	"
4-4	"	110	"	"	24	"

From the above examples it will be seen that, with a given-sized lens, the picture becomes smaller when nearer the screen, and larger the farther away. At a given distance from the screen, the smaller lenses produce larger, and the larger lenses smaller pictures, the brilliancy and flatness increasing with the size of lens.

THE CARE OF LENSES.

It is not unfrequently that a lens of standard reputation is accused of working unreasonably slow, in the hands of even an experienced photographer. When the matter is thoroughly investigated, however, the fault is in almost every instance chargeable to various causes, and *not* to the lens.

Most photographers do not need to be told, that it impairs the working qualities of a lens to let it remain uncapped for a great length of time when not in use, or, that the instrument requires occasionally to be taken apart and the lenses relieved of any dust or mist that may have accumulated. Many are the instances, however, in which the glasses, taken out to be cleaned, are replaced *in the wrong order*, thus incapacitating a lens which before worked admirably.

Numerous photographers indulge in the pernicious habit of removing with their fingers particles of dust adhering to the outer surface of a lens. In the first stage of this practice no traces are visible, but in time a mere glance will reveal innumerable fine scratches on the much-fingered surface, and it is not to be wondered at if the owner ultimately

is working slow. We have seen some lenses which had been so treated—the natural result of the practice alluded to—had the top glass of an old show-case, and to obtain a focused image, even with a diaphragm, was a feat.

The peculiar construction of the gallery, the color of the light, accessories, curtains,—each is an important element in the success of a "strong and quick light," which, in its turn, makes the lens. Certain well-known lenses have not been so successful in some galleries, owing to a "slow light," which, if properly accelerated, if the proprietor would only make the necessary adjustments. A clean chamois-skin or silk handkerchief is the best for cleaning the lenses of an objective.

Special

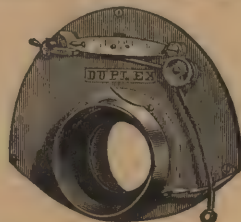
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33560

PHOTOGRAPHIC SHUTTERS.

THE PROSCH

DUPLEX



SHUTTER

FOR BOTH INSTANTANEOUS AND TIME EXPOSURES.

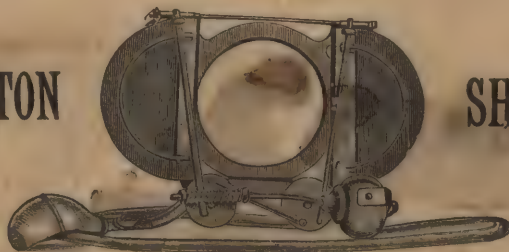
ONE of the most ingenious and practical shutters in the market. Operates between the lenses of a double-combination lens, and is supplied attached to a barrel corresponding exactly to the lens with which it is to be used. Can be had to fit lenses of any make, and Voigtländer and Darlot lenses according to the annexed table:—

SIZES.	Aperture at Diaphragm.	*For Darlot Rap. Hem.	Extra Rapid Euryscopes.	*For Rapid Euryscopes.	Price.
00	$\frac{6}{8}$ inch.	No. 1	No. 0	. . .	\$11 50
0	$\frac{5}{8}$ "	" 2	" 00	No. 0A	12 00
0A	1 "	. . .	. . .	. . .	12 50
1	$1\frac{1}{8}$ "	. . .	" 1	" 00A	13 00
1A	$1\frac{1}{4}$ "	" 3	" 2	" 1A	13 50
2	$1\frac{3}{8}$ "	. . .	. . .	. . .	14 00
2A	$1\frac{4}{8}$ "	" 4	" 3	" 2A	14 50
3	$1\frac{5}{8}$ "	" 5	" 4	" 3A	16 00
4	2 "	. . .	. . .	" 4A	18 00
5	$2\frac{1}{8}$ "	. . .	" 5	" 5A	20 00
6	$3\frac{1}{8}$ "	. . .	" 6	" 6A	25 00

* These lenses require a collar at base of barrel, costing 50 cents extra.

GARLAND'S NEW

SKELETON



SHUTTER

FOR PORTRAIT-CAMERAS EXCLUSIVELY.

The numerous defects in devices of this nature heretofore offered have been entirely overcome in the construction of this Shutter, and we are confident that it will merit the approval of every operator giving it a trial. It is made in the following three sizes:—

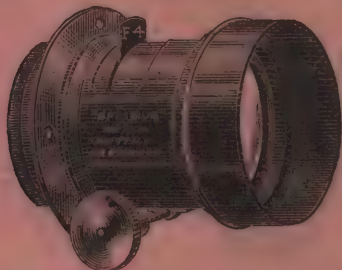
3 and 4 inch opening each \$4.00.
 $4\frac{1}{2}$ inch opening " 4.50.

Trade ONLY.

CAMERAS, LE

And PHOTOGRAPHIC APP

'OPTIMUS



PORTRAIT LENS

Specially constructed as quick acting for short exposure in portrait second to none; the definition being maintained by their perfect

Diameter...	...	2 inches.	2½ inches.	3½ inches.
Price ...	...	90/-	120/-	180/-
		1 B.	2 B.	3 B.

PORTRAIT LENSES of good Quality—

To cover ...	...	1	1½	2	10
		27/9	60/-	135/-	270/-

Larger Sizes to Order.

'We now turn to the "OPTIMUS RAPID EURYSCOPE." Working as a LARGE APERTURE (F/6 approx.) it serves as a portrait and group Lens, as well as a landscape and copying objective. There is no doubt of its proving a most USEFUL J. TRAILL TAYLOR, *British Journal of Photography*.

'We are pleased to find upon trial that the Lens ("Optimus" Rapid Rectilinear) sent for review is really an EXCELLENT instrument.'—*Photographic News*.

'PORTRAIT LENS.—The "OPTIMUS LENSES" are MODERATE in PRICE, and yield most EXCELLENT results.'—*Amateur Photographer*.

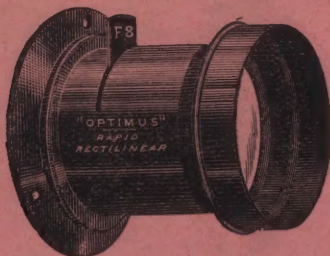
99, Hatton Garden, London.

Telegraphic Address, 'OPTIMUS.' Registered Trade Mark.

discounts to the Trade

GLASS, LENSES,
PHOTOGRAPHIC APPARATUS.

OPTIMUS'



RAPID RECTILINEAR.

Second only to the Euryscope for Rapidity, therefore well suited for effects, outdoor groups and views, as well as interiors. Copying also within the capabilities of the lens; in fact, its work may be described as **UNRIVALLED.**

8 $\frac{1}{2}$	10	12	14	18	20	25 in
$\frac{1}{3}$	$\frac{2}{5}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{1}{2}$
49/6	64/-	82/6	127/6	142/6	180/-	225/-

The "OPTIMUS RAPID EURYSCOPE." Working as it does with such a small aperture (F/6 approx.), it serves as a Portrait and Group Lens, as well as a landscape copying objective. There is no doubt of its proving a most **USEFUL LENS.**—*TAYLOR, British Journal of Photography.*

'We are pleased to find upon trial that the Lens ("Optimus" Rapid Rectilinear) sent for review is really an **EXCELLENT** instrument.'—*Photographic News.*

'**PORTRAIT LENS.**—The "OPTIMUS LENSES" are **MODERATE** in PRICE, and yield most **EXCELLENT** results.'—*Amateur Photographer.*

99, Hatton Garden, London.

Telegraphic Address, 'OPTIMUS.' Registered Trade Mark.

Solar Enlargements.

Miller & Litchfield,

523 Washington St.,

(NEAR WEST ST.)

Boston.

ELEVATOR FROM THE STREET.

Our new Studio for copying and enlarging pictures by solar and electric light will be ready for business **October 1st.**

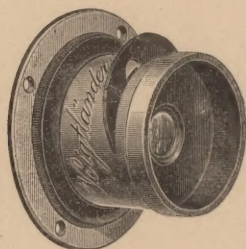
With long practical experience in all branches of photography, we can assure intelligent attention to the wants of our customers, and it will be our aim to produce the best solar prints in Boston.

Our location is central, (opposite the dry goods house of R. H. White & Co.,) and our elevator starts from street door.

NOTE:—Mr. R. A. Miller is well known as a pioneer in solar printing, and was located twelve years at 352 Washington Street. Mr. C. M. Litchfield has been ten years in the photograph business at the same location.

VOIGTLÄNDER & SON'S

New Quick



Wide Angle

SINGLE LANDSCAPE LENS.

Thanks to the inventive genius and unceasing energy of Messrs. Voigtlander & Son, we take great pleasure in offering to the professionals and amateurs of this country the latest production of this celebrated firm, in the shape of a new landscape-lens.

It is a single achromatic lens, made upon original curves calculated by the manufacturers, and is made from a new and powerful optical glass, which, on account of its great cost, is used by only few opticians. For a single lens it embraces a remarkable width of angle, and is exceedingly rapid in action, being excellent for instantaneous photography. Its defining power is at once sharp, penetrating, delicate and uniform; and when used in photographing buildings, it produces less marginal distortion than any other single lens now on the market. Each lens is provided with rotating stops. With so many desirable features, and a cost comparatively low, the new lens is destined to become a universal favorite.

Number.	Diameter of Lens.	Equivalent Focus.	Size of Plate.	Price.
1	$1\frac{1}{8}$	$5\frac{1}{2}$ in.	4x5	\$16.50
2	$1\frac{1}{4}$	7 in.	5x7	18.50
3	$1\frac{1}{2}$	$8\frac{1}{2}$ in.	7x9	23.00
4	$1\frac{3}{4}$	10 in.	8x10	28.00
5	2	12 in.	10x12	33.00
6	$2\frac{1}{4}$	$13\frac{1}{2}$ in.	12x15	39.00
7	$2\frac{1}{2}$	16 in.	15x18	44.50
8	3	20 in.	17x21	60.50
9	$3\frac{1}{2}$	$23\frac{1}{4}$ in.	20x24	79.50
10	$4\frac{1}{8}$	$27\frac{1}{2}$ in.	22x26	98.00

SOLE IMPORTERS AND AMERICAN AGENTS,

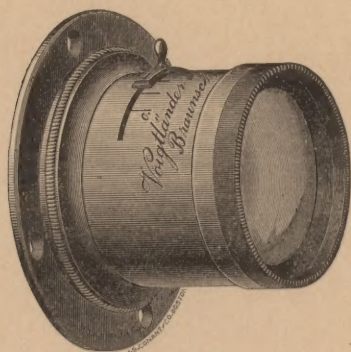
BENJ. FRENCH & CO.,

No. 319 WASHINGTON STREET,

BOSTON.

VOIGTLÄNDER & SON'S LATEST AND GREATEST SUCCESS,

—THE—



RAPID WIDE ANGLE EURYSCOPE. A NEW GROUP LENS.

Ratio of Aperture to Focal Length 1 to 6; Angle 80 Degrees.

The success in constructing this lens is very largely due to the extraordinary qualities of the special optical glass made at Jena, Germany. The new lens corresponds to EXTRA RAPID EURYSCOPE in size and form, possesses almost as much illuminating power, but has a considerably larger angle of view, thus rendering it extremely valuable for making groups in short studios, where the Euryscopes (fourth series), on account of their longer focus, cannot be used. By comparing the following table with that of the EXTRA RAPID EURYSCOPES it will be seen that with but a slightly-increased focal length, a RAPID WIDE ANGLE EURYSCOPE will cover a much larger plate, hence include more objects in the picture. For outside work in confined situations this lens will be found of great service, its great working-speed making it virtually the quickest wide-angle view lens in existence. All the desirable features of the Euryscopes, such as rapidity, depth of focus, mathematical precision, correctness of proportion and even illumination, will be found in the new lens. The great cost of the special glass employed, renders it advisable to construct only seven sizes for the present.

Number.	Diameter of Lens.	Equivalent Focal Length.	Size of Picture Full Opening.	Size of Picture Smallest Stop.	Price.
0	1 inch.	5½ inch.	5x7 inch.	6x8 inch.	\$36.50
00	1½ "	8 "	7x9 "	8x10 "	50.00
1	1½ "	9½ "	8x10 "	10x12 "	65.50
2	1¾ "	11 "	10x12 "	11x14 "	85.50
3	2 "	12½ "	11x14 "	14x17 "	103.50
4	2½ "	15½ "	13x16 "	17x20 "	140.00
5	3 "	19 "	17x20 "	20x24 "	186.50